SONY

Sony Digital Camcorder
HDW-F900

Sony HD CCD Block Adapter
HKC-T950

Sony Digital Recorder
HDW-F500

Sony HDTV Non-Linear Production System
XPRI

Sony Trinitron Color Video Monitor
BVM-F24U/F24/F24A

Expanding Creative Horizons in Movie and Television Production

Drawing deeply from its unrivalled experience in the art of high-end imaging and a unique digital heritage, Sony launched a 24-frame per second digital HD production system in 2000, raising the level of digital production. Since that time, we have continued to expand the portfolio of related core products to extend the production flexibilities of this system.

Baring the CineAlta™ brand, which identifies system elements as unique to exploring new horizons in digital production – both in moviemaking and in high-end television production, the CineAlta 24P system now includes the HDW-F900 camcorder, HDC-950 camera, HDW-F500 Digital VTR, XPRI™ Nonlinear Editing System and the BVM-F24 Multi-format Video Monitor. While these models physically resemble other established Sony products and retain their familiar operational attributes, they are distinguished by their 24-frame progressive image capture, storage, editing, and display features. Moving pictures are digitally captured according to the CIF (Common Image Format) ITU standard, which specifies a digital sampling structure of 1920 active pixels horizontally by 1080 pixels vertically.

The CineAlta systems' digital motion pictures are recorded on 1/2-inch tape and can be played back on the HDW-F500 VTR at the native 24-frame per second rate. The XPRI Nonlinear editing system facilitates online operation directly on this 24P HD video. The BVM-F24 Multi-format studio monitor provides a superb progressive scan display of these images in post production by scan converting the 24P video to a 24 or to 72 frames per second refresh rate, with the latter providing a virtually flicker-free display.

These 24P system elements comprise the basic building blocks of an efficient system for movie or prime time television production.

An addition to the CineAlta system, the new HKC-T950 CCD Block Adaptor broadens creative flexibility in 24P acquisition by facilitating a miniature 24P camera head that is tailor-made for the shooting of "miniatures" in moviemaking, and for the placement of a compact 24P camera in challenging shooting positions, such as jib-arms or within aerial and under water housings. The new addition to the production system will also be a powerful tool in "tabletop" shooting for television commercials. The ability to create wideband digital RGB feeds at 24P from this camera system further enhances creative operation by permitting direct real-time HD SDI connections to computer workstations and high-density DDRs. In combination with third party converters, this portable 24P camera can also be used with Sony's standard 60i portable HDW-250 VTR to implement a long-form 24P acquisition system (two-hour recording) that greatly extends location-shooting capabilities.

What makes Sony's CineAlta system particularly exciting to the global production community is that, while fully capable of capturing and operating at 24P, the same system elements listed under the CineAlta logo are switchable to also record at 25P/30P, and at 50/60 Hz interlaced. Thus, the CineAlta equipment offers the flexibility to support both 50 Hz and 60 Hz production for digital television broadcasting. Simply stated, the CineAlta system is the first complete digital HD production solution specifically created to meet the needs of motion picture, HDTV, television broadcasting, DVD, Internet, E-Cinema and other electronic and digital distribution mediums.

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CineAlta™ — Liberating Movie Makers

CineAlta – a name we proudly introduce to symbolize the bond between cinematography and Digital High Definition imaging. It distinguishes a Sony family of products and systems that offer new creativity in the production, post production and exchange of motion pictures. It brings together the quality and universality of 24-frame cinematography with the real-time capability, efficiency and flexibility of Digital High Definition technology. It stimulates the convergence of Motion Picture Film and Digital High Definition production on a global basis.

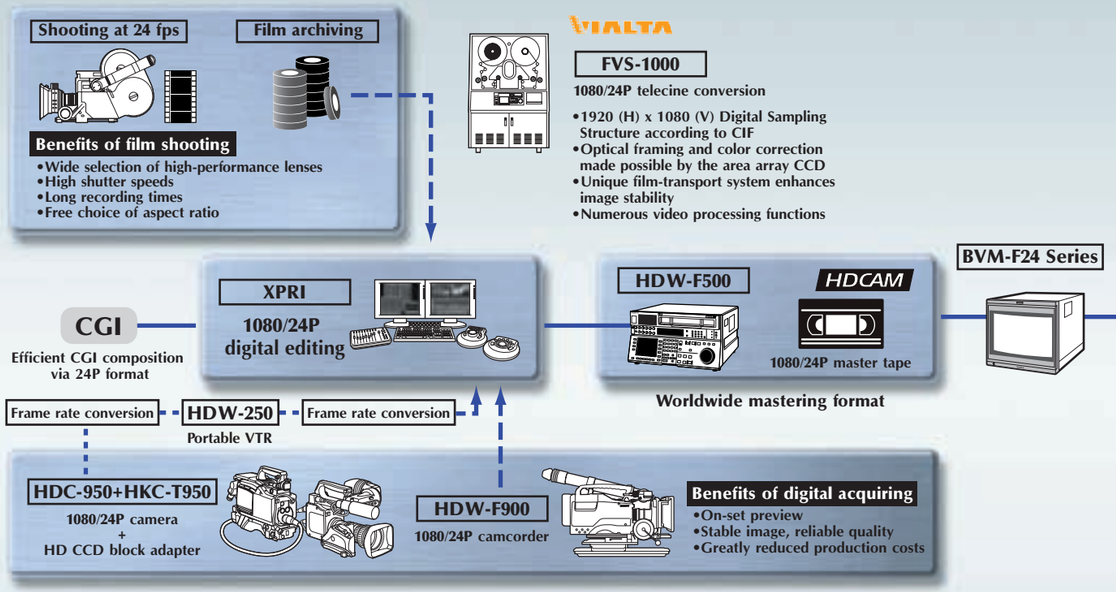
CineAlta products, delivering cinema-quality pictures at selectable frame-rates, are simplifying International Programme Exchange by minimizing the need for standards conversion. Equally, they are opening up new possibilities for international co-production.

Movie making has been liberated with the creative empowerment of the cinematographer. It is facilitated by real-time HD image evaluation on-set, instant replay of a full-color high-resolution digital "take", real-time image optimization while shooting, a 50-minute shooting load and, most importantly, by the significant cost-benefits associated with this digital medium.

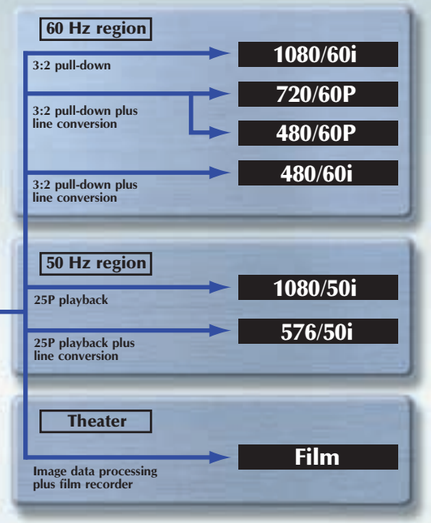
CineAlta products also ensure a seamless bridge between 24-frame film originals and a final 24P digital master. A frame of film now has a one-to-one correspondence with a progressive HD frame. The CineAlta environment readily interfaces with the computer graphics world, liberating post production. The direct color conversion of progressive 24P masters to film, and to a multiplicity of international digital HDTV and SDTV distribution formats, are the final liberation.

DIGITAL 24P PRODUCTION

HDCAM™ — The Universal Master



Conversion from 1080/24P master to multiple formats

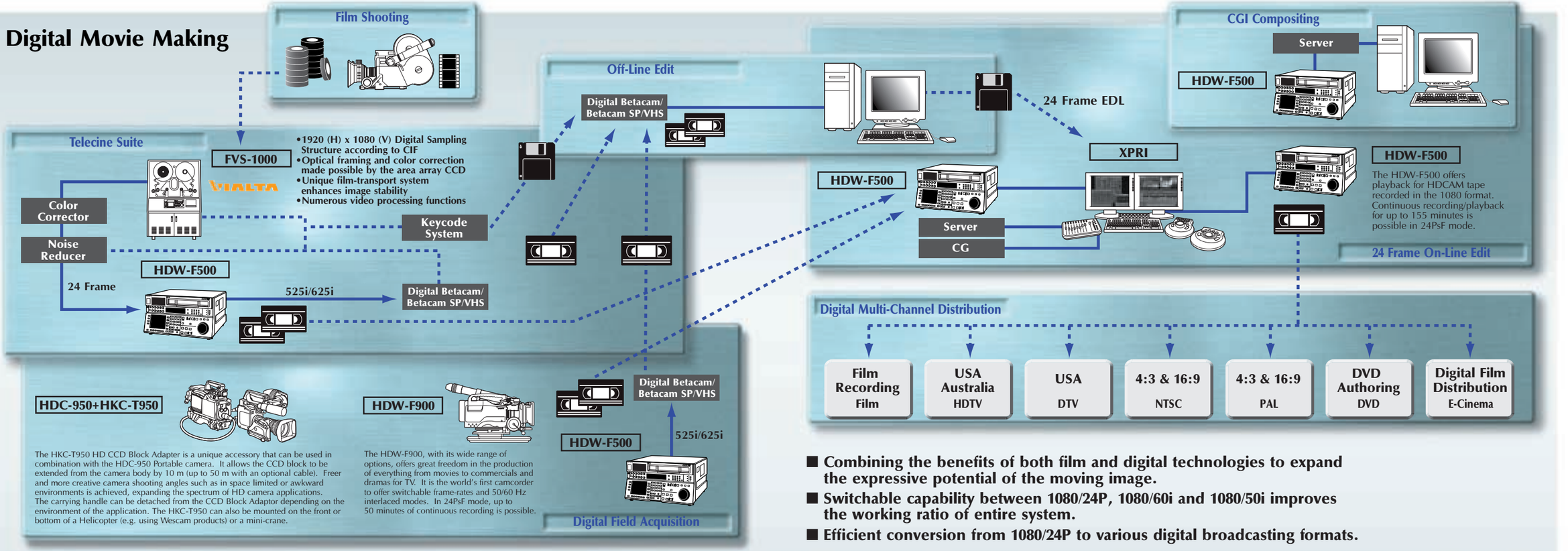


Multi-format converter ensures compatibility with various worldwide broadcasting and imaging formats including DTV, DVB, DVD, Internet and Movie-production.

Companies supporting the 1080/24P Production System

Avid Technology	Non-linear editing systems
Chyron Corporation	Character generators
Da Vinci System	Telecine color correctors
Digital Vision	Noise reducers
Discreet*	HDCAM software codecs, CGI
Evertz Microsystems	24P metadata management systems
Faroudja Labs	Signal converters
Graham Pattern Systems	Audio mixers
Leader Electronics Corp.	Waveform monitors, test signal generators
Leitech/ASC	Multiple-signal converters
N VISION	Test signal generators
Panavision	Cinema-style lenses and accessories
Pandora International	Telecine color correctors
Philips Electronics	Telecine conversion
Pluto Technology International	Server systems
Post Impression	Server systems
Quantel	Server systems, non-linear editing systems
Sierra Design Lab	Disc recorders
Silicon Graphics	Graphics workstations, server systems
ShibaSoku Co., Ltd.	Test signal generators
Snell & Wilcox	Multiple-signal converters
Sony/Tektronics Corporation	Test signal generators, waveform monitors
SyntheSys Research	Signal analyzers
Yamashita Engineering Manufacture Inc.	Multiple-signal converters

Digital Movie Making



The HKC-T950 HD CCD Block Adapter is a unique accessory that can be used in combination with the HDC-950 Portable camera. It allows the CCD block to be extended from the camera body by 10 m (up to 50 m with an optional cable). Freer and more creative camera shooting angles such as in space limited or awkward environments is achieved, expanding the spectrum of HD camera applications. The carrying handle can be detached from the CCD Block Adaptor depending on the environment of the application. The HKC-T950 can also be mounted on the front or bottom of a Helicopter (e.g. using Wescam products) or a mini-crane.

The HDW-F900, with its wide range of options, offers great freedom in the production of everything from movies to commercials and dramas for TV. It is the world's first camcorder to offer switchable frame-rates and 50/60 Hz interlaced modes. In 24PsF mode, up to 50 minutes of continuous recording is possible.

- **Combining the benefits of both film and digital technologies to expand the expressive potential of the moving image.**
- **Switchable capability between 1080/24P, 1080/60i and 1080/50i improves the working ratio of entire system.**
- **Efficient conversion from 1080/24P to various digital broadcasting formats.**

The HDW-F900 digital HDCAM camcorder combines a 3-CCD HD color digital camera, where each RGB imager has 1920 (H) x 1080 (V) sensors, with an HDCAM compact digital 1/2-inch cassette recorder. These superb new CCDs, a 12-bit A/D converter and advanced DSP processing combine to make a camcorder ideal for digital cinematography. The introduction of new techniques of HD signal processing improves the image quality even further while also simplifying the overall setup operation.

Digital Camcorder

HDW-F900

- Camera image capture complies with the ITU-R. BT 709-3 Recommendation for High Definition Production and International Programme Exchange.
- Equipped with newly developed 2/3-type, 2,200,000 sensor FIT imager in the camera section, providing high-resolution 16:9 pictures.
- Compact, lightweight and robust body design with cinematography accessories attached.
- Continuous recording time is up to 50 minutes (24P mode).
- Newly developed LSI for ADSP (Advanced Digital Signal Processor) improves picture quality, ensuring picture stability and operational reliability while reducing total power consumption.
- A new Memory Stick™ setup system memorizes various parameter settings and provides instant recall at any time.
- Electronic shutter functions such as ECS and Super EVS provide blur-free images.
- A simple switch operation enables automatic adjustment and black set, black balance and white balance.
- Various indicators for operational reliability.
- Dual filter wheels for neutral density and color temperature control.

The newest addition to the CineAlta production system, the HKC-T950 HD CCD Block Adapter is a unique accessory that greatly enhances the creative flexibility of the HDC-950 Portable camera. The HKC-T950 allows the CCD imager to be extended from the camera body by up to 10 meters (up to 50 m with an optional cable). More creative camera shooting angles, and the freedom to place the imaging assembly into areas where a full size camera would be restricted, are achieved, expanding the spectrum of HD camera applications into area such as snorkel lenses, helicopter mounts or mini jibs.

HD CCD Block Adapter

HKC-T950 (with the HDC-950)

- Camera image capture complies with the ITU-R. BT 709-3 Recommendation for High Definition Production and International Programme Exchange.
- Equipped with newly developed 2/3-inch type 2,200,000 sensor FIT imager, providing high-resolution 16:9 picture.
- Ultimate mobility offers creative shooting while retaining superb picture quality.
- Detachable carrying handle for flexible shooting styles.
- Lightweight design.

The HDW-F500 is a high definition digital editing recorder used in conjunction with the HDW-F900 HDCAM camcorder. Comparable to a conventional 1/2-inch VTRs in size, weight and ease-of-use, the HDW-F500 is a small, lightweight high definition VTR using integrated circuit technology. It has a multi-format recording/playback capability of 23.976/24/25/29.97/30 Progressive and 50/59.94/60 Hz interlace. The input-output interfaces are according to the 1920 x 1080 CIF digital sampling structure (the Common Image Format). The HDW-F500 thus complies with the ITU-R.BT 709-3 Recommendation for High Definition Production and International Programme Exchange.

Digital Recorder

HDW-F500

- Superb picture quality of HDCAM format and playback compatibility with existing HDCAM tapes recorded at 59.94 or 60 Hz.
- Longer recording time of Max. 155 minutes (24P mode).
- High performance, high accuracy heads and drum with Dynamic Tracking™ technique. Also equipped with pre-read head.
- Various output interfaces, including D1 SDI (480/576), D2 SDI (480 only) and analog composite (optional HKDV-501A required).
- Easy-to-maintain plug-in boards such as down converter and pull-down engine.
- Several remote interfaces, including RS-422A, RS-232C and Parallel 50-pin (optional BKDW-509 required).
- AES/EBU digital audio and analog audio input/output.
- Dolby®-E operation.
- Internal time code generator and reader.
- Computer servo system.
- Self-diagnostic system.
- 19-inch rack mountable.

*Dolby is a registered trademark of Dolby Laboratories.

The XPRI™ Non-linear Production System is one of the most versatile and high performance non-linear editing systems in the industry. It accommodates demanding requirement for 24P production as well as mainstream DTV programming.

HDTV Non-Linear Production System

DMW-S02NL

- Supports uncompressed HD and SD, and compressed HDCAM™ and MPEG IMX™.
- Supports 1080/24P and 1080/60i/50i frame rates.
- A Real-time Video Processing Board (optional DMW-RT02) offers real-time or high-speed rendered effects for HDCAM compressed material, and SD uncompressed or compressed material.
- Uses an industry standard GUI.
- Various control panels interact with the GUI to provide the best of both nonlinear and linear operations.
- A variety of software tools – Audio Tool, Titler, Paint, etc.
- Supports AVI, QuickTime™ and other media file formats.

The BVM-F24U/F24/F24A are High definition 24-inch or 23-inch* monitors employing a 16:9 aspect ratio Flat Surface HR Trinitron® CRT. This series of monitors are primarily used for critical evaluation of E-Cinema contents produced in 1080/24P by repeatedly scanning at either two or three times their original frame rates, thus effectively eliminating the flicker effect. In addition to the 1080/24P format, the BVM-F24 series supports a variety of signal formats to suite emerging multi-format HD needs. The other unique advantage of this series is its ability to accept Dual link HD-SDI signals as 1080/24P (4:4:4) for the applications that demand the highest possible HD quality.

*Viewable area measured diagonally.

Trinitron Color Video Monitor

BVM-F24U/F24/F24A

- Support of various format signals: 1080/24P, 24PsF; 1080/25P, 25PsF; 1080/50i, 60i*; 1080/50P, 60P etc.
  *Alternate scan display. Frame rate is also compatible with 1/1.001.
- Built in HD-SDI decoder and frame converter for HD-SDI input to eliminate flicker.
- Dual Link HD-SDI inputs: 1080/24P (4:4:4), 1080/60i (4:4:4), 1080/60P (4:2:2) etc.
- SXGA Format Signal Support (frame rate: 75 Hz and 85 Hz).
- Equipped with various area markers supported the film aspect ratios.
- 16:9 aspect ratio Flat Surface HR Trinitron CRT.
  Resolution: 1000 TV lines, Phoshor: SMPTE-C (BVM-F24U), EBU (BVM-F24, F24A).
- On Screen Menu for adjustment and operation.
- Auto white balance functions.
- Built-in various circuits of Beam landing, Digital uniformity and Digital convergence.
- Separate control unit (BKM-10R/11R).
- Setup and adjustment with Memory card.
- Built-in test signal generator for crosshatch, 100% white signal, 20% gray signal, gray scale, and PLUGE (Picture Line Up Generating Equipment).
- Pulse cross function for simultaneous checking of the horizontal and vertical synchronization signals.

HDW-F900 Specifications

General	
Mass	Approx. 8 kg (17 lb. 0 oz) with typical ENG lens, cassette and BP-L60A Battery
Power requirement	DC 12 V (+5.0 V/-1.0 V)
Power consumption	42 W (With 12 V power supply, REC mode, with HDVF-20A)
Operating temperature	0 °C to +40 °C (+32 °F to +104 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating humidity	25 % to 80% (Relative humidity)
Continuous operating time	Approx. 80 min (With BP-L60A)
Inputs/outputs	
Genlock video input	BNC, 1.0 Vp-p 75 Ω
Time code input	BNC, 0.5 V to 18 Vp-p, 10 kΩ
Audio CH1/CH2 input	XLR-3-pin type (Female), -60 dBu/+4dBu selectable, high impedance, balanced
Mic input	XLR-3-pin type (Female), -60 dBu
Monitor output	BNC (x 3, Y/P_B/P_R), 1.0 Vp-p, 75 Ω, unbalanced
Audio output	XLR-5-pin type (Male), 0 dBm
Time code output	BNC, 1.0 Vp-p, 75 Ω
Earphone	Mini-jack, 8 Ω, - ∞ to –18 dBs variable
DC input	XLR-4-pin type (Male), 11 to 17 V DC
DC output	11 to 17 V DC, Max. 100 mA
Lens	12-pin
Remote	8-pin
VTR section	
Recording format	HDCAM
Tape speed	Approx. 77.4 mm/s (24P mode)
Playback/Recording time	Max. 50 min with BCT-40HD (24P mode)
Fast forward/rewind time	Approx. 6 min with BCT-40HD
Recommended tape	Sony BCT-40HD/22HD
Sampling frequency	Y: 75.25 MHz, P_B/P_R: 37.125 MHz
Quantization	10 bit/sample of input-output signals (8 bit sample for internal compression process)
Error correction	Reed-Solomon code
Error concealment	Adaptive three dimensional
Audio performance (Playback with Standard HDW-F500)	
Frequency response	20 Hz to 20 kHz, +0.5 dB/-1.0 dB
Dynamic range	More than 85 dB (Emphasis ON)
Distortion	0.08% Max.
Cross talk	-70 dB
Wow & flutter	Below measurable limit
Camera section	
Pickup device	3-chip 2/3-type FIT type CCD
Picture elements	2,200,000 pixels
Optical system	F1.4 prism system
Built-in filters	A: 5600K B: 3200K C: 4300K D: 6300K; 1: Clear 2: 1/4ND 3: 1/16ND 4: 1/64ND
Shutter speed (1080/24P mode)	$1/32$, $1/48$, $1/50$, $1/60$, $1/96$, $1/125$, $1/250$, $1/500$, $1/1000$ (S)
Clear scan	(ECS) 24 to 7000 Hz (Minimum setting depends on frame rate selected)
Lens mount	Special bayonet mount
Sensitivity	f10.0 at 2000 lux, 89.9% reflective, At 24 fps, with a 1/48-second shutter speed (equivalent to a 180° film camera shutter setting), the exposure index is approximately equivalent to 300 ISO.
Viewfinder	
CRT	2.0-type monochrome
Controls	Brightness control, Contrast control, Peaking control, Tally switch, Zebra Pattern switch, Display/Aspect switch
Horizontal resolution	500 TV Line (At center)
Microphone	Ultra-directional (Detachable)
Supplied Accessories	
	HDVF-20A, HD Electric Viewfinder (1) Microphone, Super cardioid directional, external power supply type (1) VCT-14, Tripod Adapter (1) Shoulder strap (1) Rain cover (1) Operation manual (1) Maintenance manual (1)
Optional Accessories	
	HDCA-901, HD-SDI adapter HDVF-C750W, HD LCD Color Viewfinder BP-L60A, Lithium-ion battery BC-L120, Battery charger AC-550/550CE, AC adapter BCT-40HD/22HD, HDCAM tape cassette BKW-401, Viewfinder rotation bracket RM-B750, Remote Control unit RM-B150, Remote control unit C-74, Microphone LC-HD7, Carrying case Part No. 1-547-341-12, Fog-proof filter Part No. 3-174-685-01, 1/8 ND filter Part No. 3-174-683-01, 1/32 ND filter Part No. 3-174-682-01, Cross filter Part No. 3-186-442-01, Mounting ring Part No. A-8314-798-A, Viewfinder eyepiece (High performance x 3, with soft cushion) Part No. A-8262-537-A, Viewfinder eyepiece (High magnification) Part No. A-8262-538-A, Viewfinder eyepiece (Low magnification) Part No. A-8267-737-A, Viewfinder eyepiece (Standard magnification with special compensation for aberrations)

HKC-T950 Specifications

General	
Current consumption	13.0 to 17.0 V DC
Operating temperature	-20 °C to +45 °C
Operating humidity	10% to 90% (no condensation)
Dimentions (Approx. W x H x D)	Cable adapter: approx. 0.5 kg (1 lb 2 oz) CCD block adapter: approx. 0.85 kg (1 lb 14 oz) (adapter only) approx. 1.65 kg (3 lb 10 oz) (with the CCD block)
CCD block adaptor I/F	
Camera cable	CCZ type 26 pin (Male)
MIC IN	XLR-3 (Female)
VIDEO OUT (HD Y)	BNC x 1
LENS	12 Pin
VF	20 Pin
INCOM	XLR-5 (Female)
Cable adaptor I/F	
Camera cable	CCZ type 26pin (Female)
MIC OUT	XLR-3 (Male)
VF	20 Pin
INCOM	XLR-5 (Male)
Supplied accessories	
	HDCZ-A10 cable (10 m) (1) VF relay cable (1) MIC relay cable (1) INCOM relay cable (1) Top cover (1) Operation manual (1)
Optionla accessories	
	HDCZ-A25 (25 m) Part number: 1-823-616-11 HDCZ-A50 (50 m) Part number: 1-523-617-11

HDC-950 Specifications

General	
Lens mount	Sony bayonet mount
Mass (approx.)	5.1 kg (11 lb. 11 oz, without VF and lens)
Dimensions (W x H x D, approx.)	133 x 276 x 360 mm (5 3/8 x 11 x 14 1/4 inches)
Operating temperature	-20 °C to +45 °C (-4 °F to +113 °F)
Storage temperature	-20 °C to +50 °C (-4 °F to +122 °F)
Imaging System	
Pickup device	3-CCD 2/3-type 16:9 FIT
Picture elements	2.2 million pixels
Spectrum system	F1.4 prism system
Filter System	
Color correction filter-A	Cross
Color correction filter-B	3200 K
Color correction filter-C	4300 K
Color correction filter-D	6300 K
Color correction filter-E	8000 K
Neutral density filter-1	Clear
Neutral density filter-2	1/4 ND
Neutral density filter-3	1/8 ND
Neutral density filter-4	1/16 ND
Neutral density filter-5	1/64 ND
Servo filter control	Yes
Performance	
Sensitivity	f 10 at 2000 lux (3200 K, 89.9% reflectance)
Minimum illumination	10 lux (F 1.4, +12 dB gain up)
Signal to noise ratio	54 dB (typical)
Horizontal resolution	1000 TV lines
Dynamic range (1080/60i mode)	600%
Registration	Within 0.02% (all zones, without lens)
Shutter speed selection (1080/60i mode)	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 (sec)
Gain selection	-3, 0, +3, +6, +12 dB
Clear scan selection (1080/60i mode)	60.1 to 4300 Hz
Extended Clear Scan (1080/60i mode)	30.3 to 58.3 Hz
Modulation depth	45% or more horizontally (800 TV lines at center, 27.5 MHz, with typical lens)
Smear level	-135 dB (typical)
Frequency response	Within ± 0.5 dB, 10 to 25 MHz Within ± 1.0 dB, 25 to 30 MHz
Inputs/outputs	
Input connectors	Front Mic in: XLR-3-31 type (Female x 1) Audio in: XLR-3-31 type (Female x 2), phantom+48 V, 600 Ω, balanced Reference in: BNC type,
Output connectors	Test out: BNC type, 1.0 Vp-p 75 Ω HD SDI out: BNC type DC out: 4-pin, 10.5 to 17 V, Max. 200 mA Earphone: Minijack, 8 Ω
Input/output connectors	CCU: Optical fiber connector Lens: 12-pin Viewfinder connector: 20-pin Remote: 8-pin (for RCP-700 Series) External command: 8-pin, RS-232C Tracker: 20-pin External I/O: 20-pin (for CA-905L) Memory Stick slot (x 1) VTR out: CCZ-type, 26-pin Intercom XLR 5-pin, (Female x 2) Genlock/Prompter out: BNC type, 1.0 Vp-p, 75 Ω
Supplied accessories	
	Operation manual (1)

HDW-F500 Specifications

General	
Power requirements	100 to 240 V AC (±10%, 50/60 Hz)
Power consumption	230 W
Operating temperature	+ 5 °C to +40 °C (+41 °F to +104 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating humidity	25 % to 80% (Relative humidity)
Mass (Approx.)	35 kg (77 lb. 2 oz)
Dimensions (W x H x D)	427 x 237 x 520 mm (16 3/4 x 9 3/8 x 20 1/2 inches)
Tape speed	77.4 mm/s (24P mode)
Digital recording/Playback time	Max. 155 min with BCT-124HDL cassette (24P mode)
Fast forward/rewind time	Approx. 3 min with BCT-124HDL cassette
Search speed range	±60 times normal playback speed (24P mode)
Servo lock time	1.0 sec or less (From standby on)
Load/unload time	6.0 sec or less
Inputs/outputs	
HD serial V/A input	BNC (x 1 with a monitoring loop-through), Serial digital (1.485 Gb/s), SMPTE 292M/BTA S-004/ITU-R.BT 709
HD reference video input	BNC (x 1, with a loop-through), Tri Level sync, 0.6 Vp-p, 75 Ω, sync negative
SD reference video input	BNC (x 1, with a loop-through), Black Burst, 0.286 Vp-p, 75 Ω, sync negative
Digital audio input (CH1/2, CH3/4)	BNC (x 2, with 2 loop-through), AES/EBU
Analog audio input (CH1/2/3/4/Cue)	XLR-5-pin type (Male) Low OFF: -60 dBu, high impedance, balanced High OFF: +4 dBu, high impedance, balanced High ON: +4 dBm, 600 Ω termination, balanced
Time code input	XLR-3-pin type, (Male x 1), 0.5 to 18 Vp-p, 10 kΩ, balanced
HD serial V/A output	BNC (x 4, with a character out), Serial digital (1.485 Gb/s), SMPTE 292M/BTA S004/ITU-R.BT 709
Pull-down output (Optional BKDV-507 required)	BNC (x 2), with character
Standard Definition V/A output (Optional BKDV-501A required)	BNC (x 3, with a character out), D1 serial digital (270 Mb/s), SMPTE 259M
Analog I/O down converted output (Optional BKDV-501A required)	Composite: BNC (x 1 with a character out) 1.0 Vp-p, 75 Ω sync negative) SD sync: BNC (x 1, Black Burst, 0.286 Vp-p, 75 Ω, sync negative)
Analog I/O reference output	1125 Sync: BNC (x 2), Tri Level sync, 0.6 Vp-p, 75 Ω, sync negative
Digital audio output (CH1/2 CH3/4)	BNC (x 2), AES/EBU, unbalanced
Analog audio output (CH1/2/3/4/Cue)	XLR-3-pin type, (Female x 5), +4 dBm, (With a 600 Ω load), low impedance, balanced
Monitor output (L/R)	XLR-3-pin type, (Female x 2), +4 dBm, (With a 600 Ω load), low impedance, balanced
Time code output	XLR-3-pin type, (Female x 1), 2.2 Vp-p low impedance, balanced
Phones	JM-60 stereo phone jack, - ∞ to –12 dBu (With an 8 Ω load), unbalanced
HD SDTI input/output	BNC (x 2), Input/output, Serial digital
Remote 1 input	D-sub 9-pin, Female, Sony 9-pin remote interface
Remote 1 output	D-sub 9-pin, Female, Sony 9-pin remote interface
RS-232C	D-sub 25-pin, Female
Video control	D-sub 9-pin, Female (For optional HKDV-503)
Parallel remote (Optional BKDW-509 required)	D-sub 50-pin, Female
Panel remote	D-sub 15-pin, Female
Digital video performance	
Sampling frequency	Y: 74.25 MHz, P_B/P_R: 37.125 MHz
Quantization	10 bits/sample of input-output signals (8 bits sample for internal compression process)
Compression	Coefficient recording system
Channel coding	S-NRZI PR-IV
Error correction	Reed-Solomon code
Error concealment	Adaptive three dimensional
Analog composite output performance (With optional HKDV-501A)	
Bandwidth	Y: 0 to 5.75 MHz +5.0 dB/-3.0 dB
S/N ratio	56 dB or more
Y/C delay	15 ns or less
K Factor (2T Pulse)	1% or less
Output SCH phase	Based upon RS-170A/CCIR R.624-3
Digital audio performance	
Sampling frequency	48 kHz (Synchronized with video)
Quantization	20 bits/sample
Wow & flutter	Below measurable level
Headroom	20 dB (Or 18 dB selectable)
Emphasis	T1 = 50 μs, T2 = 15 μs (on/off selectable in recording mode)
Analog audio output performance	
A/D quantization	20 bits/sample
D/A quantization	20 bits/sample
Frequency response	20 Hz to 20 kHz, +0.5 dB/-1.0 dB (0 dB at 1 kHz)
Dynamic range	More than 95 dB (At 1 kHz emphasis ON)
Distortion	Less than 0.05% (At 1 kHz, emphasis ON, reference level)
Cross talk	Less than –90 dB (At 1 kHz, between any two channels)
Cue truck	
Frequency response	90 Hz to 12 kHz ± 3 dB
S/N ratio	More than 45 dB (At 3% distortion level)
Distortion	Less than 2% (T.H.D at 1 kHz, reference level)
Wow & flutter	Less than 0.2% rms
Supplied Accessories	
	AC power cord (1); RCC-5G, 9-pin remote cable (1); PSW4 x 16 screws, for rack mounting (4); SRAM 64 KB memory card (1); Operation manual (1); Maintenance manual part 1 (1)
Optional Accessories	
	HKDV-501A, HD-SD Converter board HKDV-502, HD Line converter board HKDV-503, HD Digital Video Controller HKDV-506A, SDTI input and output board HKDV-507, HD Pull-down board BKDW-509, Parallel 50-pin interface kit RMM-110, Rack Mount Adapter BCT-HD12CL, Cleaning Cassette BCT-124HDL/64HDL/40HD/22HD, HDCAM tape cassette

XPRI Specifications

General
System OS: Windows 2000 Professional®
NTSC/PAL switchable
Upgradable from SD HD system (*option)
Automatic Save Function
Clip Explorer
Search Function
Subclipping
Multiple Bins/Folders
Story board layout
Signal Generator Clip
Selectable video test pattern (SMPTE type color bars, 100%/75% color bars, Black, White)
Selectable audio signal from 100 Hz, 400 Hz, 800 Hz, 1 kHz
Interoperability
Import/Export EDL (BVE9100, CMX3600, GVG)
Import/Export OMF
Import Clip
Import/Export of AVI, QuickTime™, WAVE, AIFF
Import of JPG, BMP, TGA, Sequential TGA with alpha, Photoshop with alpha, PICT, SGI, Flash
Logging and Digitize
VTR control through GUI, keyboard, and control panel
Direct to timeline digitizing
Batch Digitizing
2 SD Uncompressed video streams
1 Uncompressed HD video stream : 1080/24P, 60i, 50i (*HD system only)
Supported compression: HDCAM 1080/24P, 60i, 50i (*HD system only), MPEG IMX 50 Mb/s
HD-SDTI/SDTI-CP I/O
SDTI-CP Input up to twice normal speed transfer of MPEG
8 Audio Tracks
EDL based audio conform
Dual VTR control for simultaneous dual stream digitizing via SDI interface
Video Input
Video input adjustments saved with each clip or each reel (Black, White, Hue, Saturation)
Vectorscope and Waveform monitor with line selection, freeze frame, Y/Cr/Cb selection, and field mode
Audio Input
Audio level and EQ settings saved with each clip or by entire reel
Audio level meter display
Timeline
48 Video Layers (virtual)
48 Audio Tracks (virtual)
64 Layers of undo & redo
Lift/Overwrite and Extract/Splice Edit modes
Slice track with indication of numbered edit points on timeline
Add Edit, Quick Dissolve
Speed Control, Fit to Fill (selectable interpolation modes)
Match Frame from timeline to source viewer
Match frame from timeline to bin
Tool Bar Customization/Command palette
Customization and save/recall workspaces
Sync Lock to maintain synchronization
Match Frame from source viewer to bin
24P, 23.976P support on timeline (*HD system only)
Trimming
2, 4, & 6 screen edit modes
A-side trim, B-side trim, & AB trim (settable rollers)
Quick trim on timeline
Audio
Audio waveform display on timeline
Audio Mixer with Level, Solo, Mute, Pan, & Gain functions, and level indicators
Audio Router with 8-channel outputs matrix
Group Bus Fader with level adjustment and indicators
EQ tool with realtime Frequency and Gain adjustments for Low, Mid, High ranges
Realtime Fade In & Out and Cross fades
8 realtime playback tracks on timeline
Audio Rubber Banding linked to 8 channel motorized faders
Audio Automation with motorized faders on playback with overide

Effects
Unlimited Clip Effects
Realtime clip effects and transitions for SD system
Software based 2D/3D clip effects for SD system
Software based accelarated 2D/3D clip effects and transitions for HD system
FX Editor with individual Key frame tracks for each adjusted parameter
Software based Freeform DVE adjustments for use with trackball hardware
Secondary Color Correction
Fill key source of title clip with video
Adjustable tension and trajectory
Display of key signal that is being derived
Storable user effects
Rendering
Full multi-processor rendering
Title
Inscriber® TitleMotion
PINNACLE SYSTEMS® TitleDeko (option)
Paint
Paint - RGB, Mask, Alpha
Paint Tool - Pencil, Brush, AirBrush, Flood Fill, Clone, Eraser
Selection - Rectangle, Ellipse, FreeHand, Lasso, Magic Wand, Color Range
Layer options- Tree, Mask, Position, Transparency
Animate layer parameters on a still image
Import/Export - RGB, RGBA, Mask
Support Tablet pressure sensitive operation for paint and effects
Auto paint
Motion tracking
Roto Spline, Feathering
Record to VTR Options
Select section or entire sequence/clip
Recording options: Assemble Edit, First Edit + Assemble, Crash Record, Insert Edit
Preview of inserting assembling or recording
Audio Output Display
Archiving
DTF-2 backup, VTR tape backup
Supported 3rd party software
PINNACLE SYSTEMS® Title Deko Pro
SDK
FX Plug-In SDK available
Control Panels
USB Control panels: Jog/Shuttle, Audio Fader, Track Ball, Media Bar control panels
keyboard and control panel function assignment capability
Colored keyboard with short cuts

Built in AV I/O		
	Input	Output
Digital Video	SDI BNC(1)	SDI BNC (1) Monitor Out : SDI BNC (1)
Analog Video	Composite BNC (1) S-Video Mini-DIN 4-pin (1) Component Y/R-Y/B-Y BNC (3) Ref. Video BNC (2) (incl. loop-through)	Composite BNC (1) S-Video Mini-DIN 4-pin (1) Component Y/R-Y/B-Y BNC (3) Ref. Video Black Burst BNC (2)
Digital Audio	AES/EBU BNC (2)	
Analog Audio	XLR 3-pin (4) Phono Jack (2, L/R) Stereo Mini Jack (1)	XLR 3-pin (4) Monitor Out Phono Jack (2, L/R)
HD Video (*HD system only)	HD-SDI BNC (1) Ref. Video BNC (1)	HD-SDI BNC (1)
SDTI I/O (*option)	HD-SDTI/SDTI-CP BNC(1) Ref.Video BNC(2) (Analog,incl.Loop-through)	HD-SDTI/SDTI-CP BNC(1)

VTR Control	
Remote	RS-422A, D-sub 9-pin (2, Sony 9-pin remote interface)
Digital Media Workstation	
Dimension (W x H x D)	440 x 220 x 610 mm (17.3 x 8.6 x 24 inches)
Weight	Approx. 27 Kg (59.5 lbs)
Power Requirement	90-132 / 180-264 Vac 47 Hz to 63 Hz
Power Consumption	270 W SD system / 300 W HD system
Fibre Channel Storage Unit	
Dimension (W x H x D)	445 x 154 x 642 mm (17.5 x 6.07 x 25.3 inches)
Weight	Approx. 36 Kg (80 lbs)
Power Requirement	100 to 240 Vac +/- 10% 47 Hz to 63 Hz
Power Consumptio	400 VA max

BVM-F24U/F24/F24A Specifications

		BVM-F24U	BVM-F24/F24A
General			
Signal format		54 kHz to 91.1 kHz	
Type		Display unit	
Power requirements		100 V to 240 V AC±10%, 50/60 Hz	
Power consumption (Max.)		225 W	
Dimensions	mm	565.5 (W) x 436.8 (H) x 609.3 (D)	
	inch	22 3/8 (W) x 17 1/4 (H) x 24 1/8 (D)	
Mass		Approx. 54 kg (119 lb. 1 oz)	
CRT	CRT type	24-inch HR Trinitron (flat surface, 16:9 aspect)	
	AG pitch	0.25 to 0.28 mm, 90° deflection, Ø29.1mm in-line gun	
	Visual screen 5:4	361.6 (W) x 271.2 (H) mm, (452 mm)	
	(Viewable area, measured diagonally) 16:9	482.1 (W) x 271.2 (H) mm, (553.1 mm)	
	Phosphor	SMPTE-C	EBU
Inputs/Outputs			
Video	RGB	BNC type x 3 (75 Ω), 0.7 Vp-p (1 Vp-p, Sync on Green) +3 dB/-6 dB, positive	
	HD-SDI *Single Link (4:2:2), Dual Link (4:2:2), Dual Link (4:4:4)	BNC type x 2 (75 Ω) with monitor out, 1.485 Gb/s (Data rate) Single Link Mode (Line1 or Line2): 2 inputs, Dual Link Mode (Link A and Link B): 1 input *Delay time range between Link A and Link B: Within ±1/2 H	
External sync		BNC type x 2 (75 Ω)	
	Composite SYNC	0.3 to 5.0 Vp-p, positive/negative tri-level sync signal input or negative bi-level sync signal input	
	Separate HS/VS	0.3 to 5.0 Vp-p, positive sync/negative sync (Auto Selection)	
Remote	OPTION	RS-232C for BKM-11R Mini DIN 8-pin	
	CONTROL UNIT	RS-422 for BKM-10R D-sub 9-pin	
	REMOTE 1/Serial remote	RS-485 serial interface, D-sub 9-pin, with loop-through	
	REMOTE 2/Parallel remote	D-sub 9-pin (x 1, Short to ground)	
	ISR	D-sub 9-pin (x 1)	
Video signal performance			
Frequency response		48 Hz to 60 MHz +1 dB/-3 dB (x 2, Pseudo Display) 48 Hz to 90 MHz +1 dB/-3 dB (x 3)	
Matrix		ITU-709	
DC restoration		Black level fluctuation: less than 1% for 10 to 90% APL input signal variation	
Synchronization			
Retrace time	Horizontal blanking time	Less than 2.49 µs	
	Vertical blanking time	Less than 333 µs	
Raster and picture performance			
Normal scan		5% over scan of the effective picture area	
Under scan		3% under scan of the effective picture area	
Linearity		Within a central area bounded by a circle with a diameter equal to the picture height,less than 0.5% of the picture height, and outside the same area, about 1% of the picture height.	
Color temperature		STD (D65)/COL1 (D61)/COL2 (D65), user adjustable	BVM-F24: STD (D65)/COL1 (D61)/COL2 (D93), user adjustable BVM-F24A: STD (D65)/COL1 (D61)/COL2 (D65), user adjustable
Convergence		Within a central area bounded by a circle with a diameter equal to the picture height, Less than 0.3 mm with a central area bounded by a circle and less than 0.5 mm at any other point.	
Preset brightness		100 cd/m2 (30 fL) (when a 1.0 Vp-p 100% white signal is input)	
Stability of raster size		Less than 1% of picture height (at 100 cd/m2 peak luminescence, 10 to 90% APL)	
Scan delay	Horizontal	Approx. 3/8 line	
	Vertical	Approx. 1/2 field	
Center resolution		1000 TV lines (16:9)	
Operating conditions			
Operating temperature		0 to 35 °C (32 to 95 °F) Optimum operating range 20 to 30 °C (68 to 86 °F)	
Storage temperature		-10 to 40 °C (14 to 104°F)	
Humidity		0 to 90% (no condensation)	
Others			
Supplied accessories		AC cable (x 1), AC plug holder (x 1), Fuse (x 1), Operation manual (x 1), Quick reference (x 1)	
Regulation compliance		UL 1950/CSA 950(cUL Listed), FCC Class-A, IC Class-A,DHHS, DNHW	TUV (EN60950), EN55103-1, EN55103-2, PTB, CE, C-tick

SONY

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CINE ALTA

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